In the Claims

Please cancel claim(s) 1-12.

Please add claim(s) 13-32 as follows:

13. (New) A sensor arrangement for use in seismic investigation of geological formations below the seabed comprising:

a plurality of sensor nodes (20), which are positioned for deployment on the seabed to acquire pressure waves and shear waves from the geological formations and to transfer seismic data to a surface receiver, wherein each sensor node (20) comprises a substantially cylindrical structure (22) that is adopted to penetrate into the seabed and at least a first geophone (30) that is connected to the structure (22).

14. (New) A sensor arrangement according to claim 1, wherein the cylindrical structure is a skirt (22).

15. (New) A sensor arrangement according to claim 1, wherein the cylindrical structure is a ring layout of poles, with or without spaces.

16. (New) A sensor arrangement according to claim 3, further comprising a housing (27) that encloses the at least a first geophone (30) and is positioned at the top of the cylindrical structure (22).

17. (New) A sensor arrangement according to claim 4, further comprising an open cage (37) that encloses the at least a first hydrophone (38) and is positioned above the housing (27).

18. (New) A sensor arrangement according to claim 5, further comprising a grip (40) that is fixed at the top for use with a ROV ROT.

19. (New) A sensor arrangement according to claim 6, wherein the sensor node (20) is connected to a control unit (11) through an acoustic insulated cable (21).

20. (New) A sensor arrangement according to claim 6, wherein the cylindrical structure is manufactured of aluminum.

21. (New) A sensor arrangement according to claim 6, wherein the hydrophone (38) is placed about 10 cm above the geophone (30).

22. (New) A sensor arrangement according to claim 4, wherein the housing (27) encloses three geophones (30-32) that are positioned with a 90° angle in relation to each other, and a tiltmeter.

23. (New) A sensor arrangement according to claim 10, wherein the sensor node (20) is connected to a control unit (11) through an acoustic insulated cable (21).

24. (New) A sensor arrangement according to claim 11, wherein the cable (21) is led into the sensor node (20) through the upper part of the skirt (22).

25. (New) A sensor arrangement according to claim 12, wherein the cylindrical structure is manufactured of aluminum.

26. (New) A sensor arrangement according to claim 1, further comprising a grip (40) that is fixed at the top for use with a ROV ROT.

27. (New) A sensor arrangement according to claim 1, wherein the sensor node (20) is connected to a control unit (11) through an acoustic insulated cable (21).

28. (New) A sensor arrangement according to claim 1, wherein the cylindrical structure is manufactured of aluminum.

29. (New) A sensor arrangement according to claim 16, wherein the hydrophone (38) is placed about 10 cm above the geophone (30).

30. (New) A sensor arrangement according to claim 1, wherein the hydrophone (38) is placed about 10 cm above the geophone (30-32).

31. (New) A sensor arrangement according to claim 1 further comprising a housing (27) that encloses at least one geophone (30), and is positioned at the top of the cylindrical structure (22).

32. (New) A method for operating a seismic mapping system comprising the steps of:
deploying a plurality of sensor nodes on a seabed; and,
recording seismic data and data concerning system behavior by telemetry.